SUPPLIER CERTIFICATION POLICY

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ABSTRACT: This document outlines the plans, activities, and performance measurements required for a supplier to achieve and maintain a controlled, problem-preventing manufacturing system, thus qualifying for Digital Supplier Certification status.

APPLICABILITY: Required for the certification of any supplier, internal or external to Digital Equipment Corporation as required by individual procurement/quality organizations.

STATUS: APPROVED 05-Oct-1989; use VTX SMC for current status.

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APPROVAL: The Supplier Certification Policy has been approved for implementation throughout Digital Equipment Corporation.

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1 INTRODUCTION

The certification of a supplier by Digital Equipment Corporation is a cooperative process between the supplier and representatives from the quality, purchasing, and materials communities of Digital.

The decision to certify a supplier is an important step towards achieving several goals of Digital's manufacturing and materials architecture. These goals include, but are not limited to, the following.

Fewer, higher quality suppliers
Suppliers COMMITTED to operational excellence
High performance of all purchased material
Lower costs
Consistent, predictable quality and delivery

In most cases, material from a certified supplier is of such high quality that it need not be subjected to repeated inspection by Digital (Refer to subhead 2.2).

Certification indicates that a supplier monitors and controls all processes and strives for continuous improvement of those processes. This level of manufacturing excellence eliminates the need for buffer inventories to hedge against poor quality and delivery, and increases Digital product reliability and customer satisfaction.

This document has been designed as a tool to guide the user through the several steps required for certification of a supplier (either external or internal) by Digital Equipment Corporation.

Digital's Supplier Certification Program is presented in three sections; the first section (EL-MF520-00) outlines the Certification Policy - it provides an overview of certification requirements.

The second section EL-MF520-01, *Supplier Certification Policy: Steps to the Certification Decision* outlines the required sequence of steps used to reach a decision on the certification of a supplier (either external or internal). These steps allow for a thorough review of all certification requirements as well as providing a means for the consistent application of certification throughout Digital.

The third section EL-MF520-02, *Manufacturing Systems Assessment Procedure - Checklist for Supplier Certification* contains checklists to be used in the assessment of a supplier's manufacturing system. The checklists enable the assessor to understand the system and evaluate the effectiveness of each manufacturing control; they are used to determine compliance with the requirements of the Certification Policy.

1.1 PURPOSE

This policy establishes a foundation on which to build operational excellence/continuous improvement through a consistent method of supplier certification by Digital Equipment Corporation.

This document outlines the plans, activities, and performance requirements for achieving and maintaining Digital Equipment Certified Supplier status.

Manufacturing Systems Assessment Procedure - Checklist for Supplier Certification is required for use with this program. It is intended that a full assessment of the supplier's system be performed to determine compliance with this document.

The focus of the Supplier Certification Program extends beyond the approval of qualified suppliers; the program is intended to develop and maintain a controlled, continuously improving manufacturing system designed to meet the highest standards of quality, reliability, cost, and delivery.

1.2 SCOPE

This policy presents specific criteria that must be implemented and documented prior to the awarding of certified status to suppliers of materials, components, sub-assemblies, and other externally purchased items.

1.3 RESPONSIBILITIES

The Corporate Aquisition Quality Staff is responsible for the implementation and technical content of this document.

2 DEFINITIONS, APPLICATIONS, AND BENEFITS

2.1 DEFINITIONS OF CERTIFIED STATUS

A supplier shall be granted "Certified" status after demonstration of compliance with specific engineering and manufacturing criteria that result in on-going benefits to Digital, its suppliers, and its customers. Certified status indicates the following.

- **a.** Supplier's performance level meets or exceeds clearly defined and agreed upon quality, reliability, cost, and delivery goals.
- **b.** Business planning activities encompass all aspects of a successful long term operation. Plans shall be periodically reviewed and updated, and shall include, at a minimum, product/technology advances, market dynamics, inventory planning, manpower, training skills, quality performance, and reliability performance.
- **c.** Fundamental elements of a manufacturing control system are in place and working effectively.
- **d.** Decisions are made utilizing data collected from the areas of purchased materials, in-process manufacturing, customer feedback, and field performance.
- **e.** Quality emphasis is on problem prevention.
- **f.** An attitude of continuous self evaluation and improvement exists throughout the organization.
- **g.** Appropriate specifications and standards are in place, understood, and adhered to by the supplier.
- **h.** Product and process design are controlled.
- **i.** An excellent two-way communication path exists between the customer and the supplier.
- **j.** A formal, closed-loop ECO/change control system is implemented between the customer and the supplier.

2.2 BENEFITS OF CERTIFIED STATUS

By developing a manufacturing system in accordance with the intent of this policy, and through continued Digital support, history indicates that our suppliers have realized the following.

a. Continually improving quality of product.
b. Consistent delivery to schedule.
c. Reduced manufacturing costs (scrap, rework, retest).
d. Improved inventory position with better overall management inventory.
e. Increased output per employee.
f. Clear performance goals and measurement criteria between Digital and the supplier.

2.3 ACHIEVING CERTIFICATION

Suppliers complying with the requirements specified herein qualify for certified status. Compliance includes meeting the requirements and intent of subhead 4, as well as achieving a positive, communicative relationship with the Digital customer (responsible procurement/quality organization).

3 DEFINITION OF SYSTEM REQUIREMENTS

3.1 MANUFACTURING CONTROL PLAN

3.1.1 Manufacturing Process Diagram

A manufacturing diagram showing a complete manufacturing flow is required. The diagram shall illustrate the following applicable steps in the procedure, sequentially numbered.

1. Receiving
2. Incoming Inspection
3. Stockrooms
4. Kitting
5. Assembly Process
6. Inspection
7. Process Control Points
8. Test
9. Packaging
10. Shipping
11. Audit

The diagram must accurately reflect the work flow and material sequence.

3.1.2 Material Control

A documented and implemented system of material control is required to ensure that material used in the manufacturing process conforms to specification. Material control systems must include the following.

a. Clear, concise, complete, and controlled purchase specifications that reflect process and control requirements (such as burn-in).
b. Qualified vendor listing, including criteria for selection and control.
c. Receiving/shipping, stockroom, kitting, packaging, and material handling.

d. Requirements for and placement of the inspection or equivalent system used to measure compliance of components, materials, and subcontractors.
e. Vendor and internal material audits.

3.1.3 Process Control

A process control plan is a comprehensive, implemented plan that defines and establishes required controls and process limits. The plan shall include documentation, procedures, reporting systems, and defined responsibilities for the prevention, early detection, and prompt corrective action of defects and/or out-of-control conditions.

It shall be the responsibility of the manufacturing organization doing the certification to understand and properly apply statistical techniques including the collection of data, statistical reduction of data, performance analysis, and the implementation of corrective action to ensure a controlled process.

The process control plan must include the following.

a. Process and product specifications.
b. Process controls that include a means of data collection and preventive methods of process control such as process capability and capacity, a preventive maintenance plan, and change control.
c. Product control such as in-process audit, test, and final inspection.
d. Preventive maintenance and calibration of manufacturing, test, and measuring equipment (including electrical, mechanical, media, and software).
e. Process audits that measure the effectiveness of existing controls and systems, recommend enhancements, and require corrective action for non-compliance.

3.2 JOB KNOWLEDGE AND EDUCATION

A job knowledge and education plan must exist that addresses current and projected skill requirements; evidence of this planning is required to ensure that proper skills will be available to the organization when needed.

The cross-training of disciplines must be considered, such as quality technology training for manufacturing engineering personnel.

The plan must also include a method of ensuring that individuals receive required experience.

3.3 QUALITY INFORMATION SYSTEMS

Documented and implemented quality information systems must provide clear, concise, usable information to measure the performance of components, materials, processes, and products against defined business needs.

At a minimum, the system must do the following.

a. Identify problem areas so that timely action may be taken to prevent or minimize problems.
b. Quantify problem impact on cost and customer satisfaction.
c. Focus on cost-effective solutions.
d. Measure effectiveness of corrective actions.

The quality information system must include the areas of material acquisition, in-process control, test, final inspection, and customer satisfaction.

3.4 NON-CONFORMING MATERIAL CONTROL AND CORRECTIVE ACTION SYSTEMS

A documented and implemented closed-loop system must exist that defines the process for controlling materials, processes, and products that do not conform to specification.

The system must be implemented in the areas of vendors, work-in-process, and customer returns.

The system must also address the following.

- **a.** The segregation and identification of non-conforming material.
- **b.** A documented approach of continuous failure/defect analysis on customer returned material.
- **c.** Material review board (rework, scrap, waived material, and material returned to vendor).
- **d.** Supplier and customer notification, follow-up and closure of non-conformance, and all process and product waivers.
- **e.** Coordination with the appropriate design engineering groups to preclude degradation from the use of waived material.
- **f.** Logging and categorizing of non-conforming material.
- **g.** Permanent remedies implemented in a timely manner to prevent defect recurrence.

3.5 DOCUMENTATION CONTROL

A documented, implemented system(s) of documentation control must exist that clearly defines the process and assigns responsibility for originating, evaluating, approving, distributing, and releasing the following.

- **a.** Product documentation and specifications
- **b.** Process documentation and specifications
- **c.** Plant systems documentation
- **d.** Purchase and material specifications

In addition, the system must define the process for the following.

- **a.** Updating, revision control, and removal of documentation.
- **b.** Method of notifying document users.
- **c.** Maintenance and control.
- **d.** Control of temporary procedures including approval, finalization, release, and related timeframes.

3.6 PRODUCT QUALIFICATION REQUIREMENTS

a. Engineering Specification

There shall be a specification for each product under formal revision control that defines the functional and performance requirements to which correlation has been achieved and agreed to by both the customer and the supplier.

b. Qualification Testing

The product must be tested and proven to be in compliance with the requirements of the applicable specification and approved for use prior to volume manufacturing. Demonstration of conformance to applicable quality and reliability requirements shall be done at this time.
The product must also be tested for compliance with required safety and regulatory requirements and environmental standards.

c. Systems Evaluation Test

A systems configuration verification test shall be performed in accordance with the requirements of the product procurement document (engineering specification, F-class document). This applies to such products as modules, options, and field replaceable units.

d. Customer Service Plan

A plan describing the supplier's method of customer support shall be generated and agreed upon by the customer and the supplier.

3.7 MANUFACTURING SYSTEMS ASSESSMENT

Refer to EL-MF520-02, *Manufacturing Systems Assessment Procedure Checklist for Supplier Certification*. This is an independent, objective, qualitative assessment of the system and process controls required by the Certification Policy. The assessment is conducted by an experienced Certification Assessment Team.

3.8 QUALITY AGREEMENT

A written and signed agreement must exist between the customer and the supplier to ensure that the following are clearly identified, defined, and understood.

- **a.** Customer and supplier expectations and commitments.
- **b.** Reporting and communication feedback mechanism (formatting and frequency).
- **c.** Linkage to supplier and the customer corrective action systems with timely follow-up and closure.
- **d.** Performance standards and measurements for ongoing quality and reliability product testing and product audit.
- **e.** Periodic plant and process audits by the customer and the supplier.
- **f.** Warranty agreement including returned material and failure analysis procedures.
- **g.** ECO and waivers notification and implementation.
- **h.** Product performance metrics. Each metric must have a performance standard and an upper and lower control limit measured at product audit.

3.9 PRODUCT AUDIT

The supplier must perform a visual, mechanical, and functional performance assessment at the supplier's site. The assessment shall measure conformance to process results agreed upon between the customer and the supplier. At a minimum, the assessment must include the following.

- **a.** A sampling plan and its objectives (such as protection levels afforded consumer and producer).
- **b.** Defect classifications and weighting.

c. Test configuration, application, coverage, and correlation.
d. Reporting and communication mechanisms (formatting/frequency).
e. Linkage to supplier and customer corrective action systems with timely follow-up and closure.

3.10 RELIABILITY TESTING

A reliability test plan defining the approach, objectives, and reports to be utilized must be generated and agreed upon between the customer and the supplier for applicable products.

Reliability testing must be a documented, implemented program that ensures and verifies that the manufacturing process consistently produces products that meet specified reliability characteristics and requirements.

The reliability testing program shall provide feedback to the process and suppliers of parts and materials to ensure uniformity, process control, corrective action, and closure.

The supplier shall be responsible for providing results to the customer in the format and frequency defined by the quality contract.

4 CERTIFICATION PERFORMANCE REQUIREMENTS

The quality agreement between the customer and the supplier describes the quantitative goals/performance requirements that the supplier must achieve and maintain to qualify for certified status.

The specific highlights of this section of the quality agreement are summarized below.

4.1 TO ACHIEVE CERTIFICATION

Product performance requirements (quality/reliability criteria) shall be measured at specified points in the manufacturing process; this shall ensure that products supplied conform to agreed-upon criteria.

These performance requirements shall, for initial certification, be achieved for a duration and/or volume documented and agreed upon by the customer and the supplier. Performance areas to be evaluated for certification qualification include the following:

a. Product quality performance, calculated as agreed upon by the customer and the supplier (at such points as the supplier's product audit and/or within the the customer manufacturing process).
b. Product reliability performance (calculated as agreed upon by the customer and the supplier).
c. Delivery performance.
d. Field performance (if applicable).

4.2 MAINTAINING CERTIFICATION

Once certification has been achieved, it is the mutual responsibility of the customer and the supplier to manage performance and manufacturing systems as described below.

a. The supplier may only ship a product that meets or exceeds specified quality and reliability requirements.

b. The supplier must stop product shipment if either the quality or reliability of the product falls below the control limit. The producer must take whatever action is necessary to achieve the goals defined in "a", above, prior to resuming shipment.

c. Systems/products that are initially certified in one supplier location must be reassessed when the product is transferred to another location for build, or when a major process or product changes. For example, a change from semiautomated to fully automated assembly and/or test would require reassessment.

4.2.1 Performance

The process must be continually controlled. The supplier shall maintain the effectiveness of the system as certified and strive for continuous improvement of the process/product.

The end product(s) must continually conform to the functional, quality, and reliability requirements defined in this policy.

4.2.2 Manufacturing Systems

The supplier must maintain the effectiveness of plant-wide manufacturing systems to ensure product and process consistency. The full spectrum of these systems must be continually assessed. The intent of such assessment is to improve the process on a continuous basis.

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